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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/588,583

06/25/2007

Katsuaki Suzuki

YH0028-US1

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EXAMINER

FISHMAN, MARINA

ART UNIT

PAPER NUMBER

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



<b>Office Action Summary</b>	<b>Application No.</b> 10/588,583	<b>Applicant(s)</b> SUZUKI, KATSUAKI	
	<b>Examiner</b> Marina Fishman	<b>Art Unit</b> 2833	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-9,15 and 17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-9,15 and 17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |



## **DETAILED ACTION**

### ***General status***

1. This is a Final Action on the Merits. Claims 1, 4 - 9, 15 and 17 are pending in the case and are being examined.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “pair of conductive material layers each located on opposite surfaces of the PTC material layer, the pair of conductive material layers comprising metal foils” recited in Claim 1, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet”



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pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4 – 9, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bingo et al. [US 4,833,280] in view of Wang et al. [US 6,512,446].

Regarding Claims 1, 8, 9, 15 and 17, Bingo et al. [Figures 2 and 9] disclose a switch comprising:

- a conductive movable member [5];
- at least first and second terminals [9a, 9b, 9c, column 13, lines 26 +] and being switchable by mechanically moving the movable member between a state in which the movable member contacts with the first and second terminals simultaneously and a state in which the movable member is apart from either one of the first and second terminals, wherein at least one of the first and second terminals comprises a conductive contact part [8a, 8b, 8c] for



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contacting with the movable member, a conductive connect part [respective vertical legs of 9a, 9b, 9c] for being electrically connected with an external element [9a, 9b, 9c].

Regarding Claims 1, 8, 9, 15 and 17, Bingo et al. disclose the instant claimed invention, except for a PTC member, located between the contact part and the connect part, the PTC member comprising a PTC element having a PTC material layer and a pair of conductive material layers located on opposed surfaces of the PTC material, the conductive material layers comprising metal foils being electrically connected with the contact part and connect part. Wang et al. [Figure 1] discloses a polymer PTC member [13] located between the contact part [14] and the connect part [15], the PTC member comprising PTC element [13] having PTC material layer and a pair of conductive material layers [12, 11] located on opposed surfaces of the PTC material, the conductive material layers comprising metal foils being electrically connected with the contact part [14] and connect part [15], respectively. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a polymer PTC member located between the contact part and the connect part in Bingo et al., as suggested by Wang et al., in order to provide over current protection by changing the resistance depending on the temperature of the device [Wang, Column 2, lines 22-28].

Regarding Claims 4 and 5, Bingo et al. disclose the terminals fixed to a substrate [6]. The modified device of Bingo and Wang et al. will have the PTC parallel to the substrate. Alternatively the PTC material can be arranged



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perpendicular to the substrate, as a matter of design choice, in order to obtain desired dimensional characteristic of the device. Regarding Claim 7, Bingo et al. disclose an embodiment of Figure 8, which has three terminals, and satisfies the limitations of Claim 7. Regarding Claim 6, Bingo et al. and Wang disclose the instant claimed invention except for PTC material layer retained between the contact part and the connect part with a spacer. The use of a spacer, absent any criticality, is considered to be nothing more than a choice of engineering skill, choice of design because 1) neither non-obvious nor unexpected results, i.e., results which are different in kind and not in degree from the results of the prior art, will be obtained as long the PTC material can be retained between the contact part and the connect part, 2) the retaining arrangement claimed by the Applicant and that disclosed by Bingo and Wang are alternate types of retaining arrangements, which will perform the same function, if one is replaced with the other, and 3) the use of the spacer arrangement by Applicant is considered to be nothing more than the use of one of numerous and well known alternate types retaining arrangement, that a person having ordinary skill in the art would have been able to provide using routine experimentation in order to retain the PTC material. The motivation to add the spacer between the contact and the connect parts would be to reduce mechanical load on the PTC material.

### ***Response to Arguments***

5. Applicant's arguments have been considered but are moot in view of the new grounds of rejection.



***Conclusion***

6. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marina Fishman whose telephone number is (571)272-1991. The examiner can normally be reached on 5:30 - 4:00 M-T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Renee S. Luebke can be reached on 571-272-2009. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marina Fishman/  
Examiner, Art Unit 2833  
May 4, 2010

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